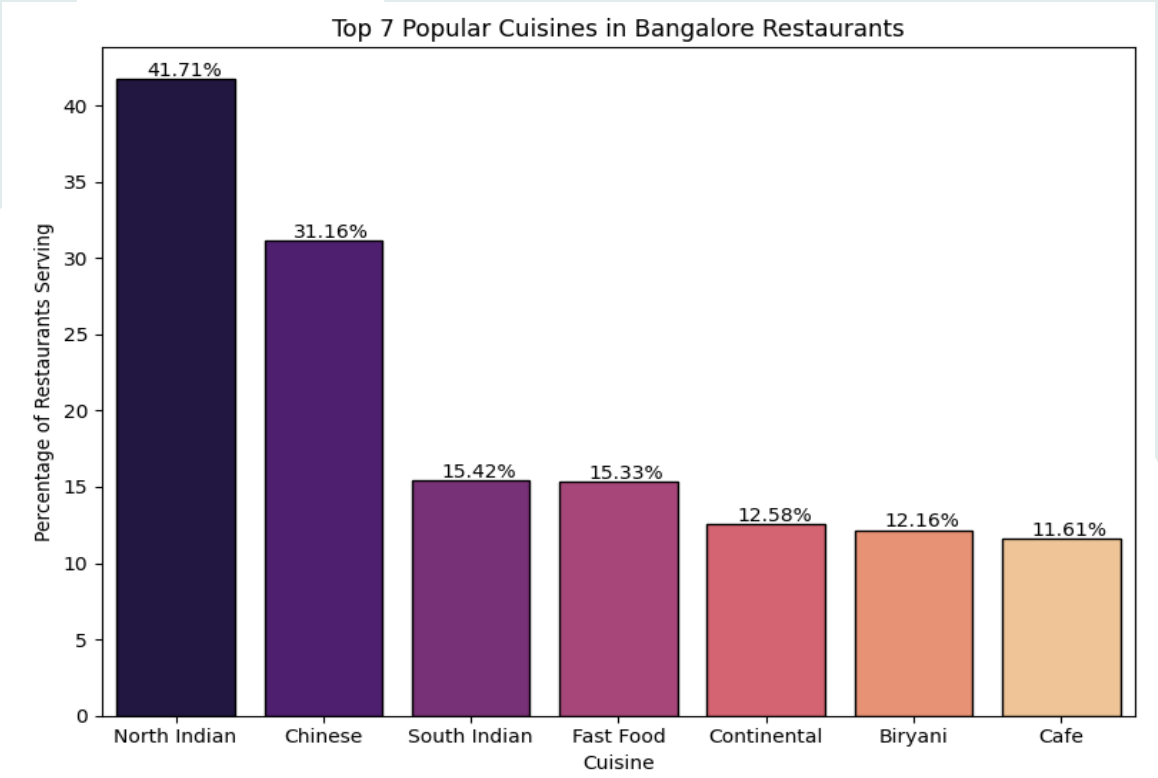
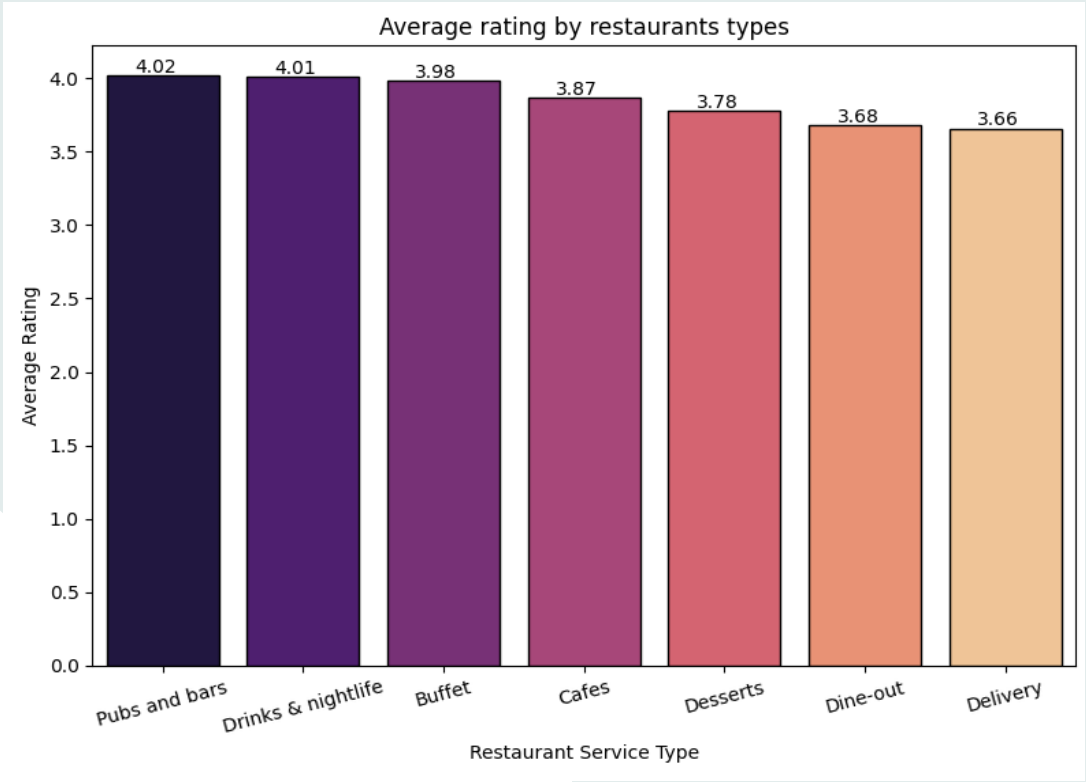
zomato

Bangalore Restaurants Analysis - Success prediction

Answering Business Questions

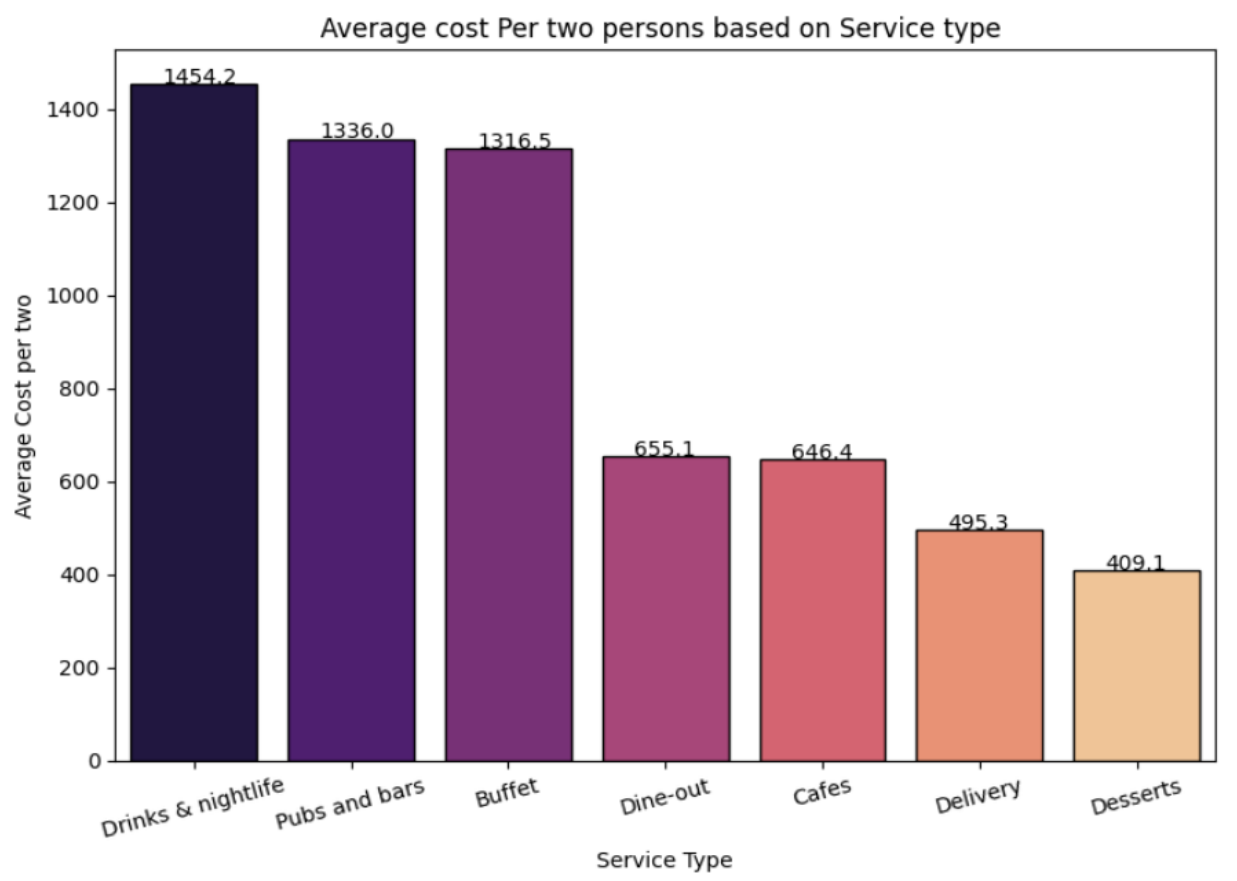
1. What are the top-rated cuisines and restaurant?





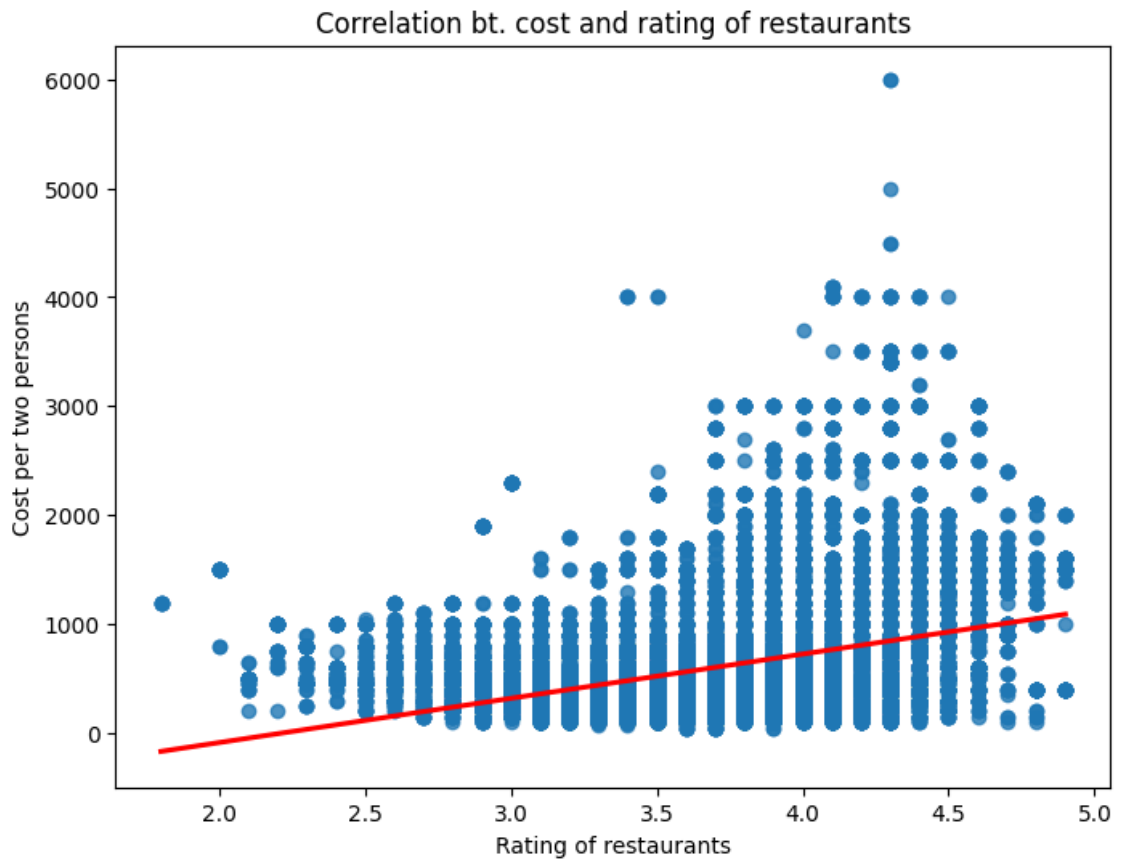
The top-rated restaurant **types** in Bangalore, based on average ratings, are **Nightlife** restaurants like Pubs and Bars, followed by **Buffet** restaurants. Additionally, the most popular **cuisines** in Bangalore are **North Indian**, **Chinese**, and **South Indian** cuisine.

2. What is the average cost for two individuals, categorized by type of service offered?



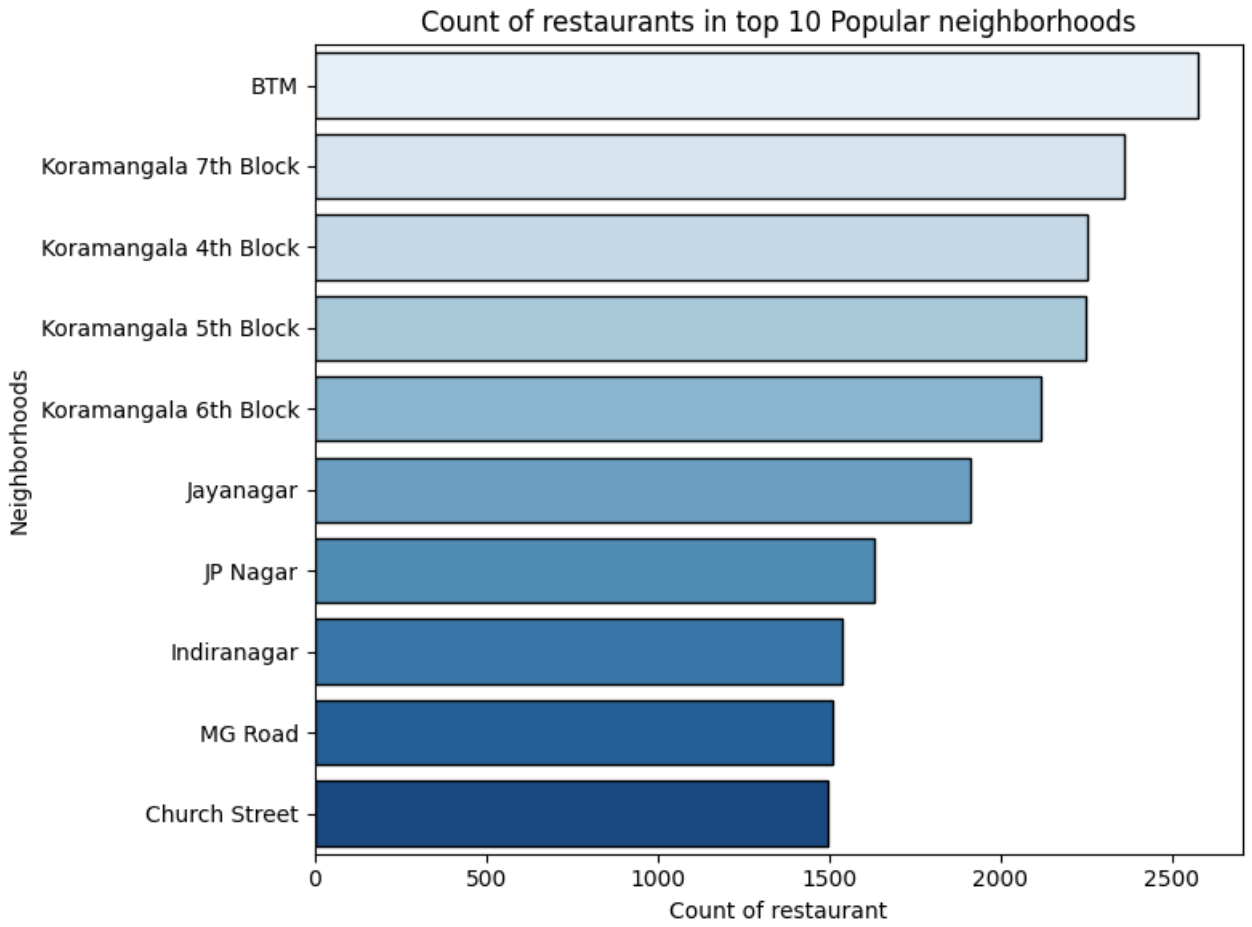
Nightlife venues are observed to have the **highest** mean **cost** for two individuals, Following closely are dining establishments that offer **buffet** services, while various **other** restaurant **types** provide a more **budget-friendly** average cost.

3. How does the average cost for two persons affect the rating of the restaurant?



it is evident that the **correlation** between the cost per two persons in a restaurant and the restaurant's rating is **not particularly strong** when the rating is **below 3.0**. However, as the rating **surpasses** this **threshold**, the **cost** tends to **rise**, eventually reaching significantly high levels in the case of upscale, luxurious restaurants, often exceeding 6000 INR for two persons.

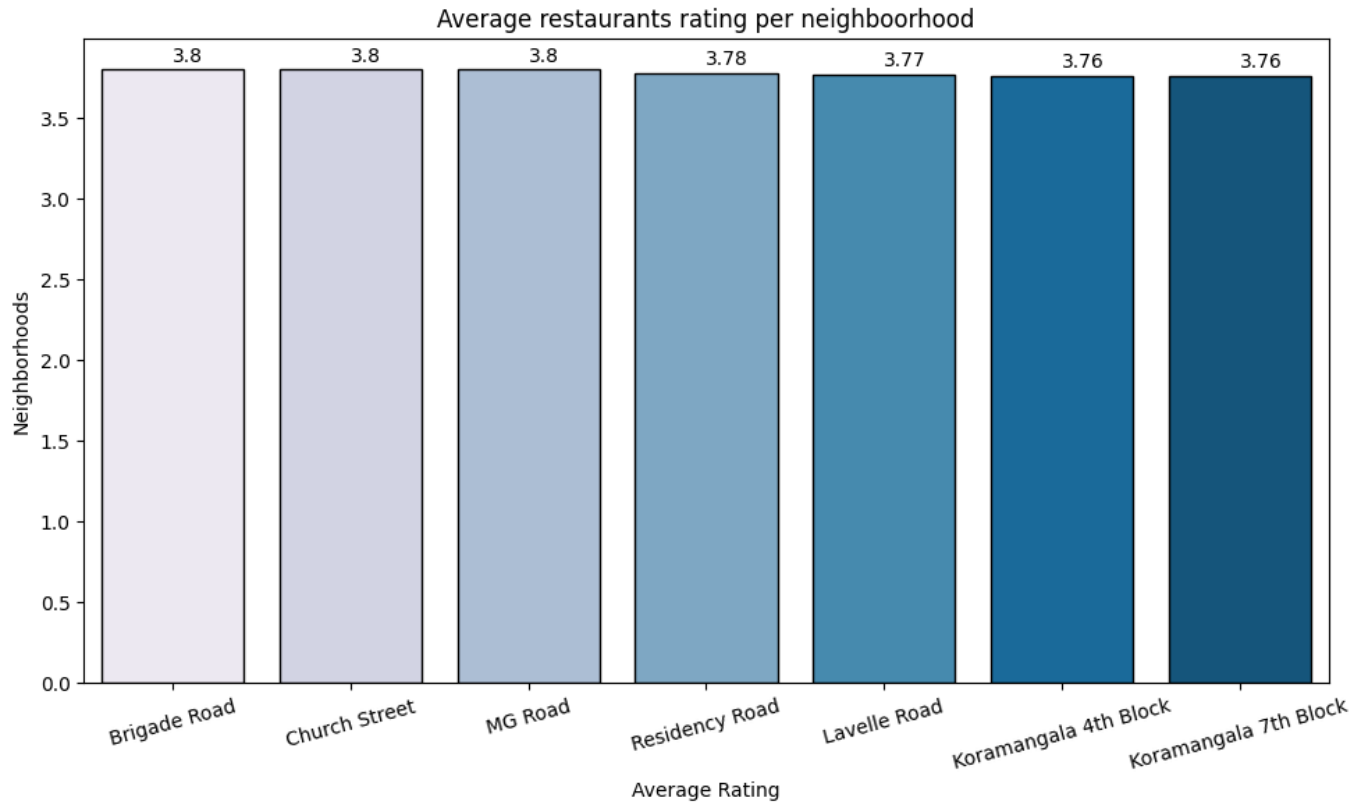
4. Which neighborhoods in Bangalore rank among the top 10 most popular for restaurants?



BTM emerges as the foremost neighborhood for dining establishments, boasting a substantial presence of over 2200 restaurants, closely trailed by the Koramangala Blocks and Jayanagar areas.

5. Is there an influence of a restaurant's location on its rating?

The neighborhoods of **Brigade Road, Church Street, and MG Road** stand out as the top three areas with the highest restaurant ratings, indicating that these locations are associated with particularly well-rated dining establishments.

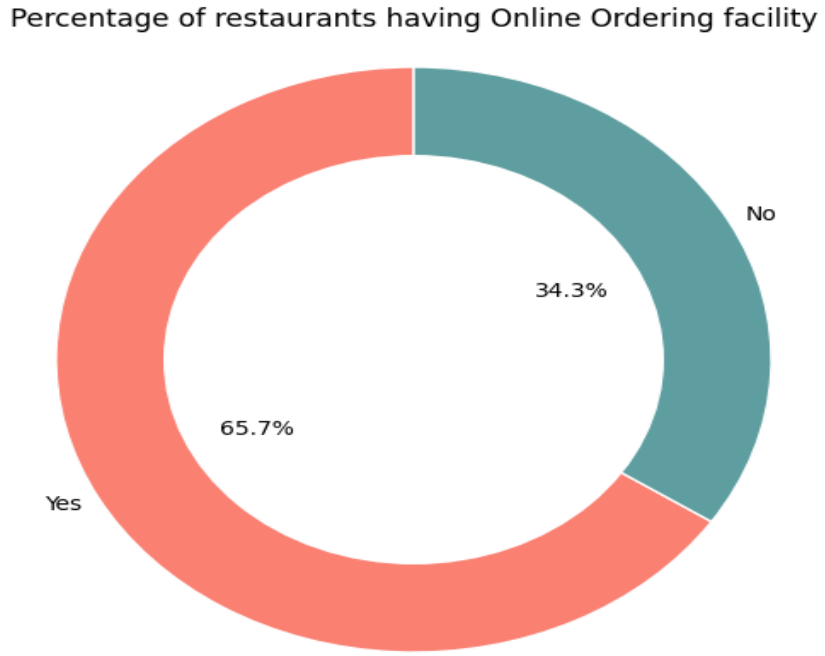


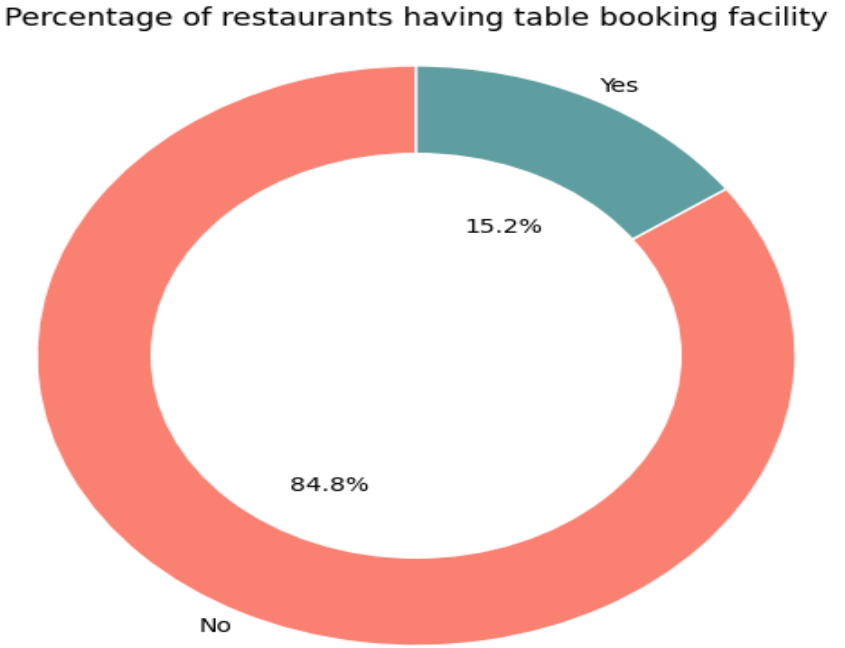
5. What proportion of restaurants provide online ordering and table booking options, and what impact does this dual offering have on their ratings?

In Bengaluru, **most** dining establishments offer **online ordering services**, while only a **limited fraction** provide the option for **advance table reservations**. Interestingly, restaurants with **table booking** or **online ordering** facilities tend to have **higher average ratings** compared to those without these amenities.

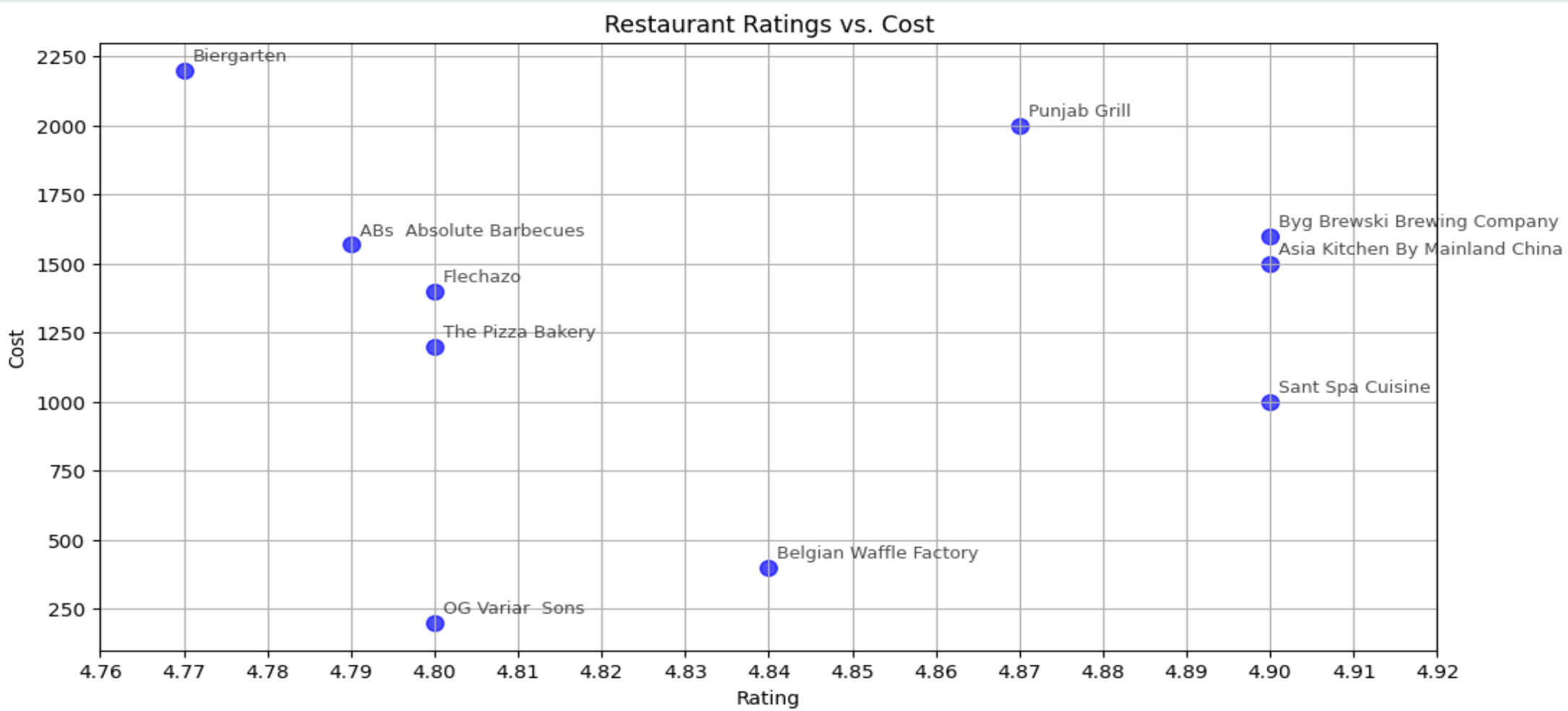
	online_ordering?	ratings
1	Yes	3.724
0	No	3.660

	table_bookings?	ratings
1	Yes	4.143
0	No	3.622

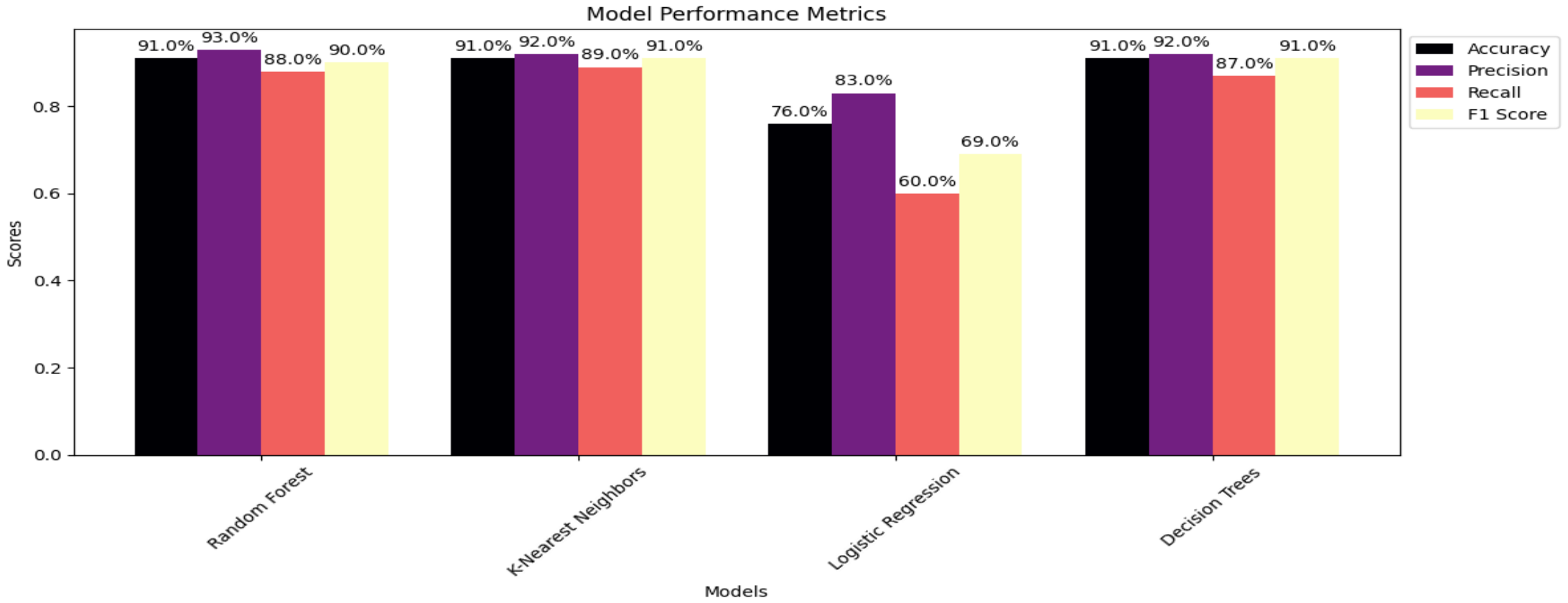




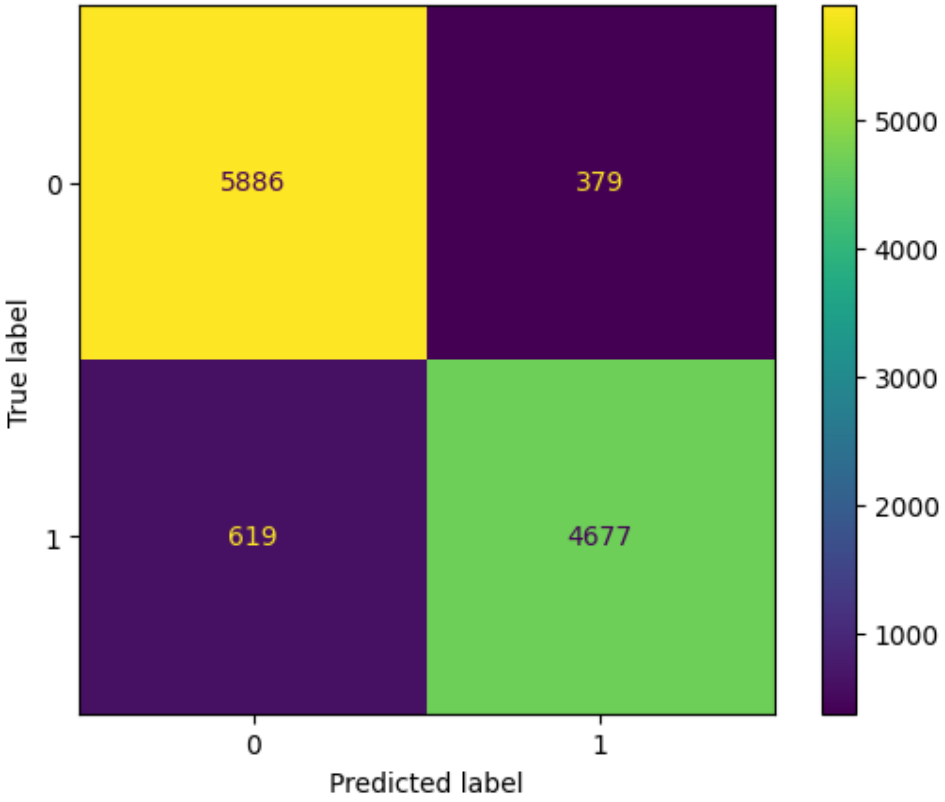
6. What are the top 10 highest-rated restaurants and their average cost and Rating?



Interpreting Predictive Model Evaluation



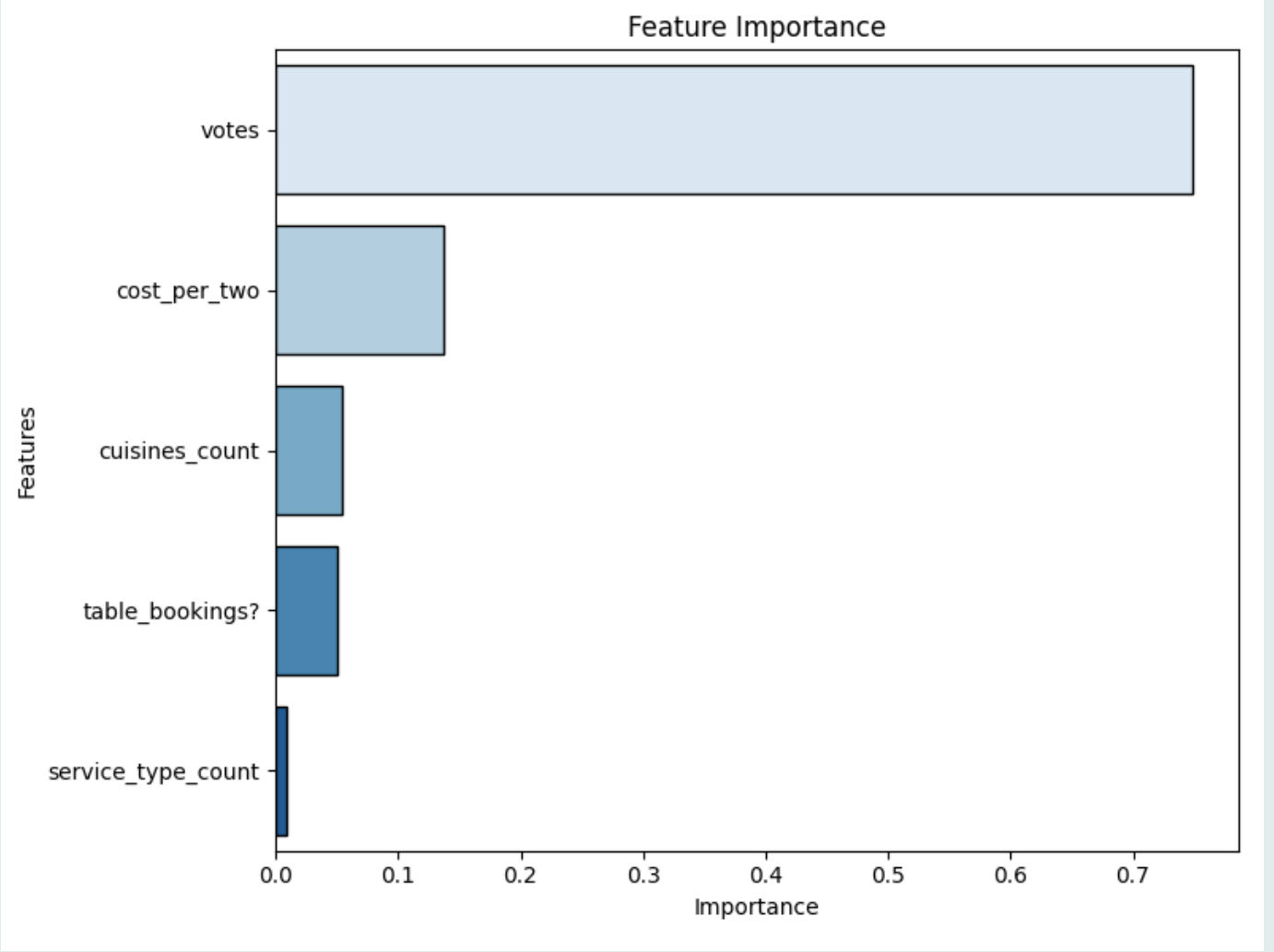
The initial step in the algorithm selection process involved setting a **minimum accuracy threshold of 80%**. As a result of this criterion, the **logistic regression** algorithm was **ruled out**. Subsequently, we considered the **precision-recall tradeoff** and determined that the **Random Forest classifier** emerged as the **optimal** choice. Notably, the Random Forest classifier not only met the accuracy requirement but also exhibited **satisfactory computational efficiency**.



Following that, an examination of the Confusion Matrix revealed that the classifier performed commendably. It made a mere **1,029 incorrect** predictions out of **11,561** cases, amounting to approximately **9%** of false predictions. Among these errors, **589** instances were **erroneously** predicted as **successful** restaurants when they were **unsuccessful**, while **440** cases were **wrongly** predicted as **unsuccessful** when they were indeed **successful** restaurants.


results

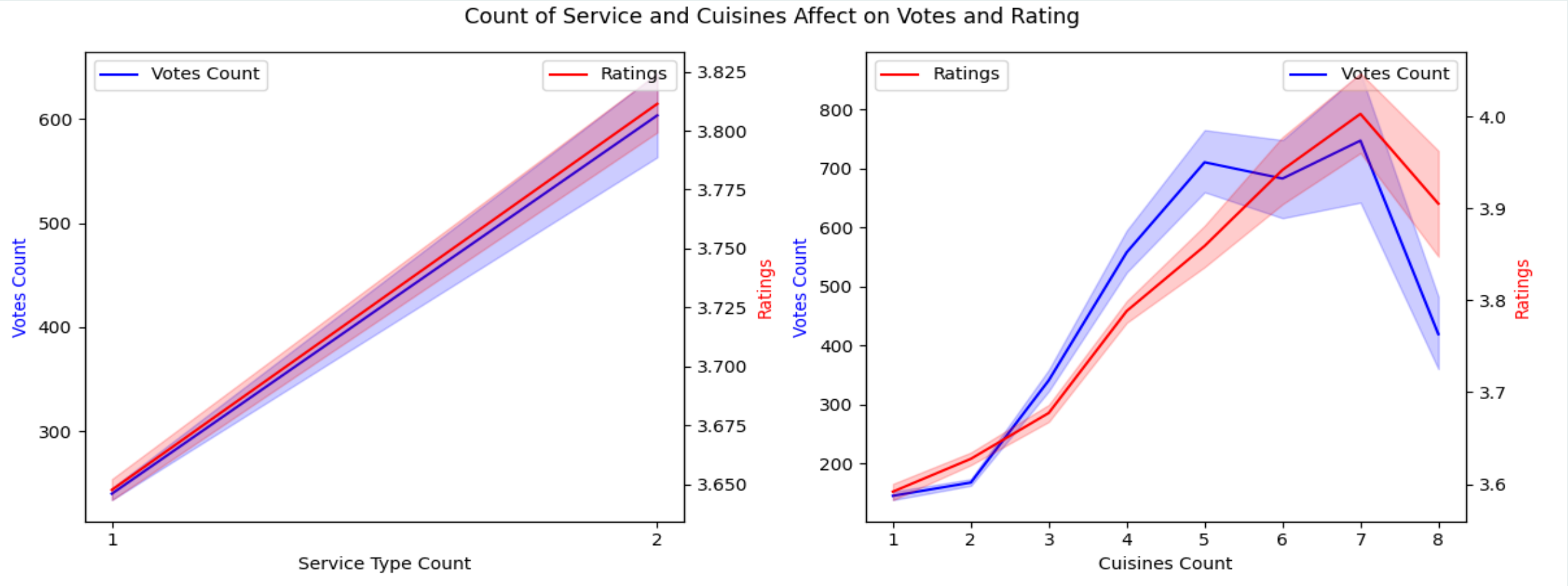
The analysis indicates that **"Votes"** emerges as a **pivotal feature** in the **model's decision-making** process for classifying restaurants as successful or otherwise. This observation aligns with **reasonable** expectations. Consequently, our attention should now be directed towards identifying the **specific features** that contribute to **higher vote counts**, thereby enhancing the **likelihood of a restaurant's success**.



The variable **"ratings"** exhibits the **highest degree of correlation** with the number of **votes**. Consequently, it becomes imperative to analyze the **interrelationship** between **ratings** and **other variables**, discerning the impact of each variable on **ratings**. This comprehensive analysis aids in **identifying critical factors** that demand attention in the pursuit of **optimizing restaurant success**.

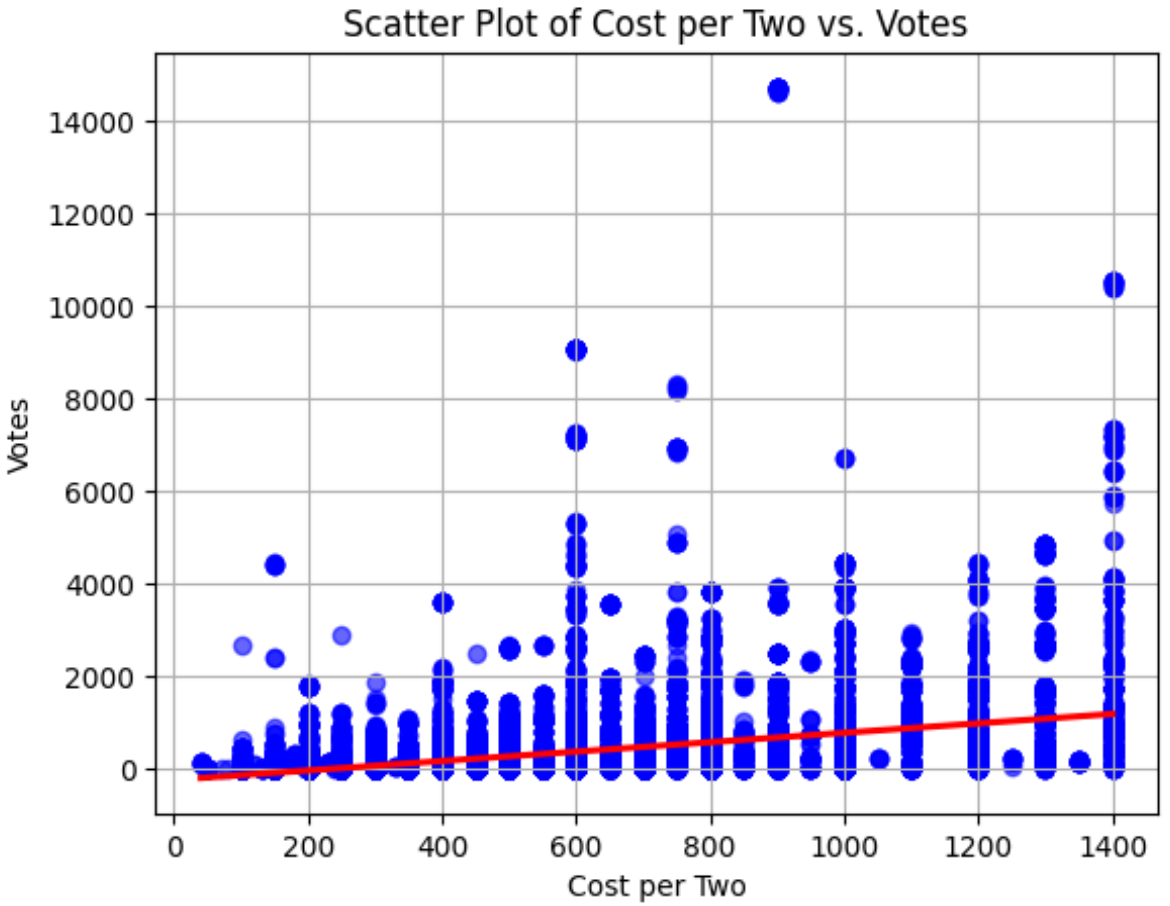
	Feature	Correlation with votes
0	ratings	0.414176
1	cost_per_two	0.398834
2	table_bookings?	0.378473
3	cuisines_count	0.219866
4	service_type_count	0.170805
5	type	0.037275
6	online_ordering?	0.018374
7	neighborhood	-0.036898

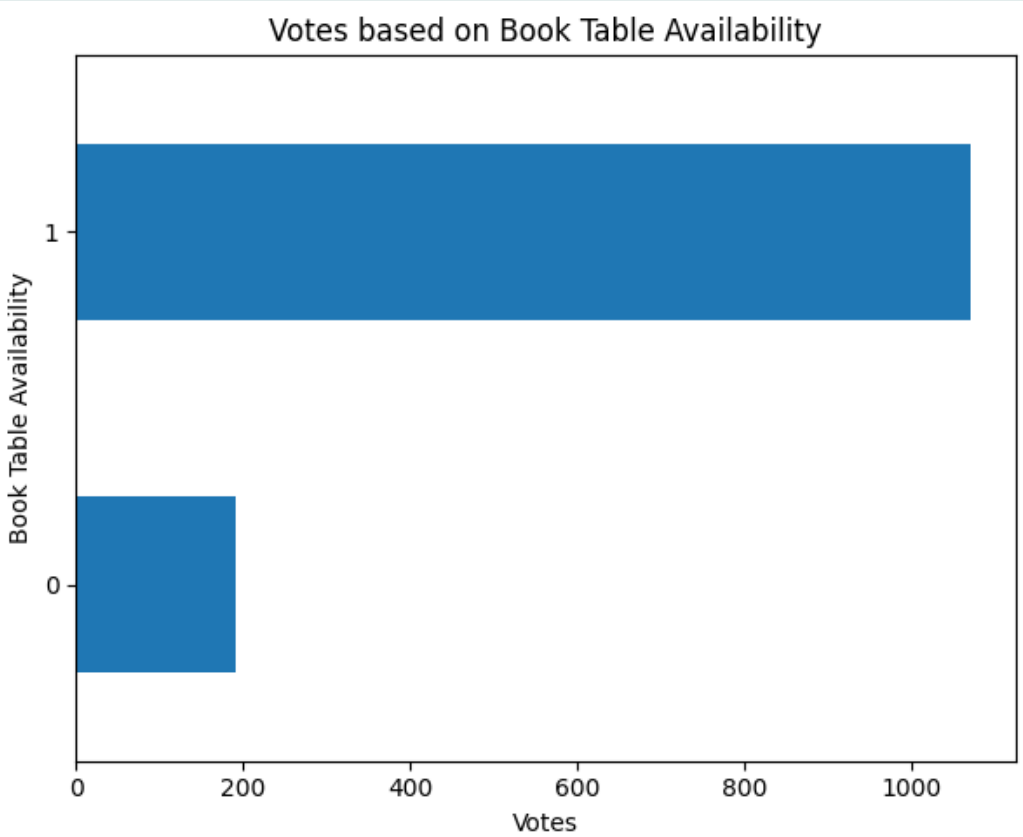
	Feature	Correlation with Ratings
0	table_bookings?	0.359305
1	cost_per_two	0.326394
2	cuisines_count	0.193550
3	service_type_count	0.132277
4	online_ordering?	0.113117
5	type	-0.002411
6	neighborhood	-0.042510

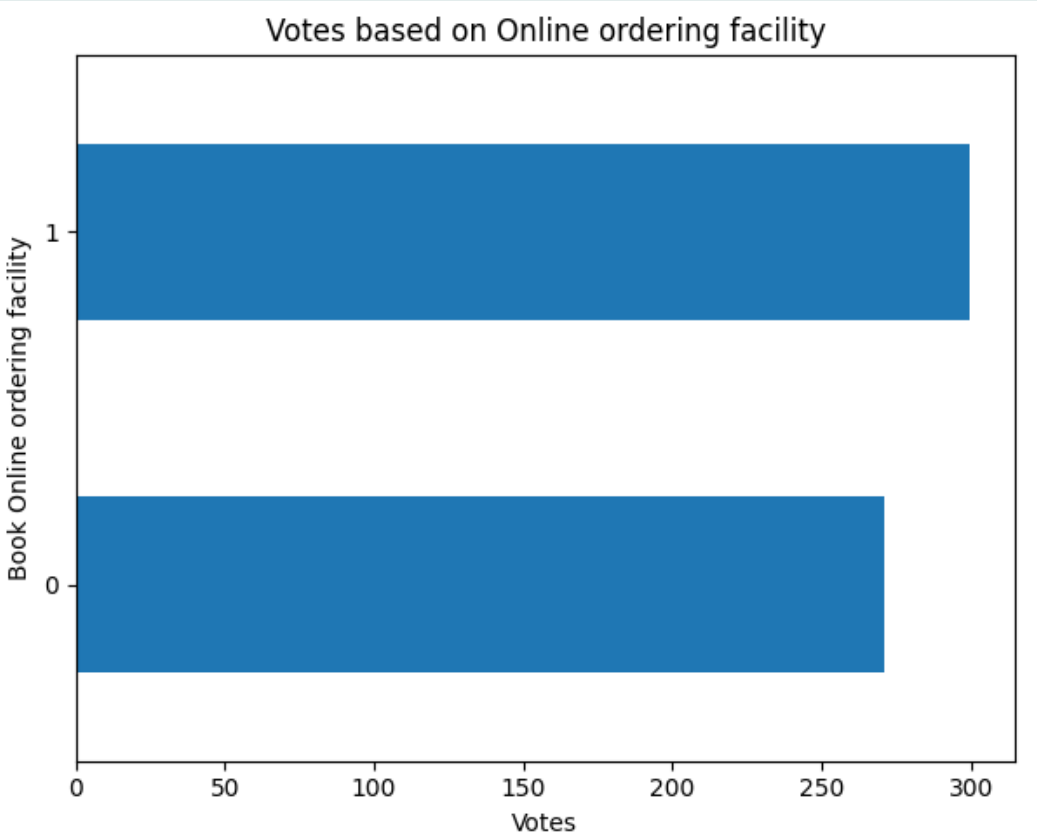


As observed in the preceding visual representations, an **escalation in the range of services** offered by a restaurant **correlates positively** with the **volume of reviews** received and the **average rating** garnered by the establishment. Conversely, the expansion of **cuisines** in which a restaurant specializes leads to an **increase** in both **reviews** and **ratings**, up to a certain **threshold**. Beyond that **point**, the quantity of **cuisines** offered **ceases** to significantly influence **reviews** and **ratings**, resulting in **diminishing** returns.

The relationship between **cost per two persons** and the number of **reviews** exhibits some **ambiguity**, albeit hinting at a trend where restaurants with a **moderate to high** cost per two persons tend to garner a **greater volume of reviews** compared to their counterparts with a lower cost per two persons.







The **availability** of features such as **table booking** and **online ordering enhances** a restaurant's **review engagement**, thereby **augmenting** the likelihood of receiving **favorable ratings**.


Thank You !